(IPE)		
(0, "%)	. 🗸	• •
JUL 0 1 2002 €	^	·
I heavy certificate this correspondence is bein First Class Wall in an envelope addressed to the shown below.	ng deposited with the US Postal Service wit e Box DD, Commissioner for Patents, Was	h sufficient postage as hington, D.C. 20231, o

PATENT Docket No. GC634-2

20231, on the date #

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE RECEIVED

In ra Application of	1	_	OLIVED
In re Application of	,	Group Art Unit: 1653	JUL 0 8 2002
Bron et al.	j ,	•	
Serial No.: 09/954,737)	Examiner: Unassigne ∄ E	CH CENTER 1600/2900
Filed: September 17, 2001)		
For: Twin-Arginine Translocation in Bacillus)))		

Information Disclosure Statement

Box DD Commissioner for Patents Washington, DC 20231

June 25, 2002

1

Sir:

Applicants submit herewith patents, publications or other information (listed on the attached Form PTO-1449 and attached thereto) of which they are aware, that they believe may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR §1.56.

This Information Disclosure Statement:

§1.97(a).
(b) is filed within three months after the filing date of the application or within three months after the date of entry into the national stage of a PCT application as set forth in 37 CFR §1.491.
(c) $oxed{\boxtimes}$ as far as is known to the undersigned, is filed before the mailing date of a first Office Action on the merits.
(d) is filed after the first Office Action and more than three months after the application filing date or PCT national stage date of entry filing but, as far

(a) accompanies the new patent application submitted herewith. 37 CFR

as is known to the undersigned, prior to the mailing date of either a final rejection or a notice of allowance, whichever occurs first, and is accompanied by either the fee (\$180.00) set forth in 37 CFR §1.17(p) or a certification as specified in 37 CFR §1.97(e), as checked below. Authorization to charge Deposit Account No. 07-1048 in the amount of \$180.00 to cover the cost of this Information Disclosure Statement is provided in the Transmittal Letter submitted herewith in duplicate.
(e) is filed after the mailing date of either a final rejection or a notice of allowance, whichever occurred first, and is accompanied by authorization (in the Transmittal Letter submitted herewith in duplicate) to charge Deposit Account No. 07-1048 the fee (\$180.00) set forth in 37 CFR §1.17(I)(1) and a certification as specified in 37 CFR §1.97(e), as checked below. This document is to be considered as a petition requesting consideration of the Supplemental Information Disclosure Statement.
[If either of boxes (d) or (e) is checked above, the following "certification" under 37 CFR
§1.97(e) may need to be completed.] The undersigned certifies that:
Each item of information contained in the Information Disclosure Statement was cited in a communication mailed from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.
No item of information contained in this Information Disclosure Statement was cited in a communication mailed from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned after making reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.
A copy of the items on Form PTO-1449 is supplied: PCT International Search Report for PCT/
, filedwith attached patents and publications.
☐ each ☑ none ☐ only those listed below:
Those patent(s) or publication(s) which are marked with an asterisk (*) on the attached Form PTO-1449 are not supplied. Complete bibliographic information is unknown or unavailable. The cited publications are books or reference manuals and are commonly available. Reproduction of such publications would result in a voluminous submission. A concise explanation of relevance of the items listed on PTO-1449 is:
not given
given for each listed item

relevant portions of the references.

The Examiner is reminded that a "concise explanation of the relevance" of the submitted prior art "may be nothing more than identification of the particular figure or paragraph of the patent or publication which has some relation to the claimed invention." MPEP §609.

While the information and references disclosed in this Information Disclosure Statement may be "material" pursuant to 37 CFR §1.56, it is not intended to constitute an admission that any patent, publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

In accordance with 37 CFR §1.97(b), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR §1.56(a) exists. It is submitted that the Information Disclosure Statement is in compliance with 37 CFR §1.98 and MPEP §609 and the Examiner is respectfully requested to consider the listed references.

Respectfully submitted,

Date: 25 June 2002

Kamrin T. MacKnight Registration No. 38,230

Genencor International, Inc. 925 Page Mill Road Palo Alto, CA 94304-1013

Tel: 650 846-5838 Fax: 650 845-6504

us	PATEN	T DOCUMENTS

Examiner's	Document				Sub-	Filing
Initial	Number	Date	Name	Class	Class	Date
	3,817,837	6/18/74	Rubenstein et al.	195	103.5	11/6/72
	3,850,752	11/26/74	Schuurs et al.	195	103.5	10/29/71
	3,939,350	2/17/76	Kronick et al.	250	365	4/29/74
	3,996,345	12/7/76	Uliman et al.	424	12	6/30/75
	4,275,149	6/23/81	Litman et al.	435	7	11/24/78
	4,277,437	7/7/81	Maggio	422	61	12/10/79
	4,366,241	12/28/82	Tom et al.	435	7	8/7/80
	4,816,567	3/28/89	Cabilly et al.	530	387	4/8/83

OTHER DOCUMENTS

Examiner's			
Initials	Author, Title, Date, Pertinent Pages, etc.		
	Altschul el et al., "Gapped BLAST and PSI-BLAST: a new generation of protein database programs," Nucl. Acids Res., Vol. 25, pp. 3389-3402, 1997		
	Antelmann et al., "Expression of a Stress – and Starvation-induced dps/pexB – Homologous Gene Is Controlled by the Alternative Sigma Factor o Bacillus Bacillus Bacillus," J. of Bacteriology, vol. 179, pp. 7251-7256, 1997		
	Antelmann et al., "Phosphate Starvation-Inducible Proteins of Bacillus Bacillus: Proteomics and Transcriptional Analysis," J. of Bacteriology, vol. 182, pp. 4478-4490, 2000		
	Bakhiet et al., "Studies on Transfection and Transformation of Protoplasts of Bacillus larvae, Bacillus subtilis, and Bacillus popilliae," Applied and Environmental Microbiology, vol. 49, no. 3, pp. 577-581, March, 1985.		
	Benton et al., "Steering λgt Recombinant Clones by Hybridization to Single Plaques in situ," Science, vol. 196, no. 4286, pp. 180-182, April 8, 1977.		
	* Berger and Kimmel, Guide to Molecular Cloning Techniques, Methods in Enzymology, vol. 152, Academic Press, San Diego, CA (1987)		
	Berks B., "A common export pathway for proteins binding complex redox cofactors," Mol Microbiol, vol. 22, pp. 393-404, 1996.		
	Berks et al., "The Tat protein export pathway," Mol Microbiol. vol. 35, pp. 260-274, 2000.		
	Bernhardt et al., "Specific and general stress proteins in <i>Bacillus subtilis</i> – a two- dimensional protein electrophoresis study, " Microbiol. vol. 143, pp. 9 1017, 1997.		
	Blum et al., "Improved silver staining of plant proteins, RNA and DNA in polyacrylamide gels, " Electrophoresis, vol. 8, pp. 93-99, 1987. Bogsch et al., "Pathway specificity for a ΔpH-dependent precursor thylakoid lumen protein is governed by a 'Sec-avoidance' motif in the transfer peptide and a 'Sec-incompatible' mature protein, "EMBO, vol. 16, pp. 3851-3859, 1997		
	Bogsch et al., "An Essential Component of a Novel Bacterial Protein Export System with Homologues in Plastids and Mitochondria, "J. Biol. Chem., vol. 273, pp. 18003-18006, 1998		
	Bolhuis et al., "Evaluation of Bottlenecks in the Late Stages of Protein Secretion in Bacillus subtilis, " App. Environ. Microbiol. vol. 65, pp. 2934-2941, 1999		
,	Bolhuis et al., "Different Mechanisms for Thermal Inactivation of Bacillus subtilis Signal Mutants, " J. Biolog. Chem., vol. 274, pp. 15865-15868, 1999		
	Bolhuis et al., *Bacillus subtilis, can modulate its capacity and specificity for protein secretion through temporally controlled expression of the sipS gene for signal peptidase I* Mol. Microbiol. vol. 22, pp. 605-618, 1996 Brink et al., *Targeting of thylakoid proteins by the ΔpH-driven twin-arginine translocation pathway requires a specific signal in the hydrophobic domain in conjunction with the twin-arginine motif, *FEBS Letters, vol. 434, pp. 425-430, 1998		
	Bron et al., "Construction and Characterization of a Transformable Eightfold Auxotrophic Strain and two Ultraviolet-Sensitive Derivatives," Mutation Research, vol. 15, pp. 1-10, 1972		
Examiner	Date Considered		
Examiner: Initia	al if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not		
considered. Inc	clude copy of this form with next communication to applicant.		

		INFORMATION DISCLOSURE CITATION	DECEMEN
Attorney Docket No.: GC634-2-US	6 4	Serial No.: 09/954,737	HECEIVED
Applicant: Bron et al.		1	.1111 0 8 2002
Filing Date: September 17, 2001	JUL U 1 2002	Group: 1653	
Page2_ of4	A N	Date of this Submission: June 25, 2002	TECH CENTER 1600/2900
	& TRAD		

OTHER DOCUMENTS

Examiner's				
Initials	Author, Title, Date, Pertinent Pages, etc.			
	Chaddock et al., *A new type of signal peptide: central role of a twin- arginine motif in transfer signals for the ΔpH-dependent thylakoid protein translocase,* <i>EMBO</i> , vol. 14, pp. 2715-2722, 1995.			
	Chanal et al., "MicroCorrespondence," Molec. Microbiol. vol. 30, pp. 673-678, 1998.			
	Chang et al., "High Frequency Transformation of Bacillus subtilis Protoplasts by Plasmid DNA," Molec. Gen. Genet. vol. 168, pp. 111-115, 1979.			
	*Coombs, J., <u>Dictionary of Biotechnology</u> , Stockton Press, New York, N.Y., 1994.			
	Contente et al., "Marker Rescue Transformation by Linear Plasmid DNA in Bacillus subtilis," Plasmid, vol. 2, pp. 555-571, 1979.			
	Cristobal et al., "Competition between Sec- and TAT-dependent protein translocation in Escherichia coli, EMBO, vol. 18 pp. 2982-2990, 1999.			
	Cserzo et al., "Prediction of transmembrane α-helices in prokaryotic membrane proteins: the dense alignment surface method," Protein Engin. vol. 10 pp 673-676, 1997.			
	Dalbey et al., "Protein translocation into and across the bacterial plasma membrane and the plant thylakoid membrane," TiBS, vol. 24, pp. 17-21, 1999.			
	*Dieffenbach et al., PCR Primer, a Laboratory Manual, Cold Springs Harbor Press, Plainview, N.Y., 1995.			
	Donovan et al., "Genes Encoding Spore Coat Polypeptides from Bacillus subtilis," J. Mol. Biol., vol. 196, pp. 1-10, 1987			
	Eder et al., "Bacillus subtilis secreted phosphodi esterase/alkaline phosphatase in the product of a Pho regulon gene, phoD," Microbiology, vol. 142, pp. 2041-2047, 1996.			
	Eymann et al., "Phosphate-starvation-inducible proteins in <i>Bacillus subtilis</i> : a two-dimensional gel electrophoresis study," Microbiology, vol. 142, pp. 3163-3170, 1996.			
	Fischer et al., "Introduction of plasmid pC194 into Bacillus thuringiensis by Protoplast transformation and plasmid transfer," <i>Archives of Microbiology</i> , vol. 139, pp. 213-217, 1984.			
	* Glover, D. M. (ed), DNA Cloning: A Practical Approach, MRL Press, Ltd., Oxford, U. K. Vol. I, II.			
	Grunstein et al., "Colony hybridization: A method for the isolation of cloned DNAs that contain a specific gene," <i>Proc. Nat. Acad. Sci. USA</i> , vol. 72, no. 10 pp. 3961—3965, October, 1975.			
	Haima, Peter et al., "Novel plasmid marker rescue transformation system for molecular cloning in Bacillus subtilis enabling direct selection of recombinants," Mol. Gen. Genet. vol. 223, pp. 185-191, 1990.			
	* Hale & Marham, The Harper Collins Dictionary of Biology, Harper Perennial, NY (1991)			
	*Hampton, R. et al., <u>Serological Methods, a Laboratory Manual</u> , APS Press, St. Paul, MN. 1990.			
	*Harwood et al., Molecular Biological Methods for Bacillus, John Wiley & Sons, 1990.			
	Hirose et al., "Proteome analysis of Bacillus subtilis extracellular proteins: a two-dimensional protein electrophoretic study," Microbiology, vol. 146, pp. 65-75, 2000.			
	Holubova et al., "Transfer of Liposome-Encapsulated Plasmid DNA to Bacillus subtilis Protoplasts and Calcium-Treated Escherichia coli Cells," Folia Microbiol. vol. 30, pp. 97-100, 1985.			
	Hulett et al., "Evidence for Two Structural Genes for Alkaline Phosphatase in Bacillus subtilis," J. Bacteriol. vol. 172, pp. 735-740, 1990			
	Hynds et al., "The Sec-independent Twin-arginine Translocation System Can Transport Both Tightly Folded and Malfolded Proteins across the Thylakoi Membrane," J. Biol. Chem. vol. 273, pp. 34868-3474, 1998			
	Jack et al., "Constitutive Expression of Escherichia coli tat Genes Indicates an Important Role for the Twin-Arginine Translocase during Aerobic and Anaerobic Growth, "J. Bacteriology, vol. 183, pp. 1801-1804, 2001			
	Keifer et al., "Negative charged amino acid residues play an active role in orienting the Sec-independent Pf3 coat protein in the Escherichia coli inner membrane," EMBO, vol. 16, pp. 2197-2204, 1997.			
	Klenk et al., "The complete genome sequence of the hyperthermophilic, sulphate-reducing archaeon Archaeoglobus fulgidus," Nature, vol. 394, pp. 364-370, 1998.			
Examiner	Date Considered			
xaminer: Initia	I if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not			
	lude copy of this form with next communication to applicant.			

Attorney Docket No.: GC634-2-US Serial No.: 09/954,737

Applicant: Bron et al.

Filing Date: September 17, 2001

Page 3 of 4

Date of this Submission: June 25, 2002

OTHER DOCUMENTS

Examiner's				
Initials	Author, Title, Date, Pertinent Pages, etc.			
	Kroll et al., "A Multifunctional Prokaryotic Protein Expression System: Overproduction, Affinity Purification, and Selective Detection," DNA and Cell Biology, vol. 12, no. 5, pp. 441-453, 1993.			
	Kunst et al., "The complete genome sequence of the Gram-positive bacterium Bacillus subtilis," Nature, vol. 390, pp. 249-264, November 20, 1997			
	Kyte et al., "A Simple Method for Displaying the Hydropathic Character of a Protein," J. Mol. Biol. vol. 157, pp. 105-132, 1982			
	Laemmli U. K. "Cleavage of Structural Proteins during the Assembly of the Head of Bacteriophage T4," Nature, vol. 227, pp. 680-685, 1970			
	Maddox et al., "Elevated Serum Levels in Human Pregnancy of a Molecule Immunochemically Similar to Eosinophil Granule Major Basic Protein," J. Exp. Med., vol. 158, pp. 1211-1226, October, 1983.			
	Mann et al., "Transformation of Bacillus spp.: an Examination of the Transformation of Bacillus Protoplasts by Plasmids pUB110 and pHV33," Current Microbiology, vol. 13, pp. 191-195, 1986.			
	McDonald et al., "Plasmid Transformation of Bacillus sphaericus 1593," Journal of General Microbiology, vol. 130, pp. 203-208, 1984.			
	* Miller, J. H., Experiments in Molecular Biology, Cold Spring Harbor Laboratory Press, Cold Spring Harbor NY (1982)			
	Muller et al., "Suppression of the growth and export defects of an Escherichia coli secA(Ts) mutant by a gene cloned from Bacillus subtilis," Mol. Gen. Genet. vol. 235, pp. 98-96, 1992			
	Muller et al., "Localisation of the cell wall-associated phosphodiesterase PhoD of Bacillus subtilis," FEMS Micro. Letters, vol. 180, pp. 287-296, 1999			
	Muller et al., "Influence of Bacillus subtilis phoR on cell wall anionic polymers," Microbiology, vol. 143, pp. 947-956, 1997			
	Murray et al., "Codon usage in plant genes," Nucleic Acids Research, vol. 17, no. 2, pp. 477-498, 1989.			
	Otto et al., "Identification of human myocardial proteins separated by two-dimensional electrophoresis using an effective sample preparation for mass spectrometry," Electrophoresis, vol. 17, pp. 1643-1650, 1996.			
	Porath, Jerker, "Immobilized Metal Ion Affinity Chromatography," Protein Expression and Purification, vol. 3, pp. 263-281, 1992.			
	Pragai et al., "The signal peptidase II (Isp) gene of Bacillus subtilis," Microbiology, vol. 143, pp. 1327-1333, 1997.			
	Qi et al., "Role of PhpP~P in Transcriptional Regulation of Genes Involved in Cell Wall Anionic Polymer Biosynthesis in Bacillus subtilis," J. Barteriol. vol.180, pp.4007-4010, 1998			
Rodrigue et al., "Co-translocation of a Periplasmic Enzyme Complex by a Hitchhiker Mechanism through the Bacterial Tat Pathway," 274, pp. 13223-13228, 1999.				
	* Sambrook, J. et al., Molecular Cloning, A Laboratory Manual, 2nd Ed., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York, 1989			
	Santini et al., "A novel Sec-independent periplsmic protein translocation pathway in Escherichia coli," EMBO, vol. 17, pp. 101-112, 1998.			
	Sargent et al., "Overlapping functions of components of a bacterial Sec-independent protein export pathway," EMBO, vol. 17, pp.3640-3650, 1998			
	Sargent et al., "Sec-independent protein Translocation in Escherichia coli," J. Biol. Chem., vol. 274, pp.36073-36082, 1999			
	Schaeffer et al., "Catabolic Repression of Bacterial Sporulation," Proc. Natl. Acad. Sci. USA, vol. 54, pp. 704-711, 1965.			
	Settles et al., " Sec-Independent Protein Translocation by the Maize Hc106 Protein," Science, vol. 278, pp. 1467-1470, 1997			
	* Singleton et al., Dictionary of Microbiology and Molecular Biology, 2D ED., John Wiley and Sons, New York (1994)			
	Sipos et al., "Predicting the topology of eukaryotic membrane proteins," Eur. J. Biochem, vol. 213, pp. 1333-1340, 1993.			
	Smith, Michael et al., "Protoplast Transformation in Coryneform Bacteria and Introduction of an α-Amylase Gene from Bacillus amyloliquefaciens into Brevibacterium lactofermentum," Applied and Environmental Microbiology, vol. 51, no. 3, pp. 634-639, March, 1986			
	Stanley et al., "Escherichia coli Strains Blocked in Tat-Dependent Protein Export Exhibit Pleiotropic Defects in the Cell Envelope," J. Bacteriol. vol. 183, , pp. 139-144, 2001			
xaminer	Date Considered			
xaminer: Initial	if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not			
	ude copy of this form with next communication to applicant. PTO-1449			

2	INFORMATION DISCLOSURE CITATION	DEAL
Attorney Docket No.: GC634-2-US	Serial No.: 09/954,737	UECEIVED
Applicant: Bron et al.		JUL 0-8-2002
Filing Date: September 17, 2001	Group: 1653	
Page4_ of4_	Date of this Submission: June 25, 2002	TECH CENTER 1600/2900

OTHER DOCUMENTS

_ /	OTHER DOCUMENTS	
Examiner's		
Initials	Author, Title, Date, Pertinent Pages, etc.	
	Stephenson et al., "Influence if a Cell-Wall-Associated Protease on Production of α-Amylase by Bacillus subtilis," App. Environ. Microbiol. vol. 64, pp. 2875-2881, 1998	
	Tjalsma et al., "Functional analysis of the secretory precursor processing machinery of Bacillus subtilis: identification of a eubacterial homolog of archaeal and eukaryotic signal peptidases," Genes & Develop. vol. 12, pp. 2318-2331, 1998	
	Tjalsma et al., * Bacillus subtilis Contains Four Closely Related Type I Signal Peptidases with Overlapping Substrate Specificities," J. Biol. Chem., vol. 272, pp. 25983-25992, 1997	
	Tjalsma et al., "The Role of Lipoprotein Processing by Signal Peptidase II in the Gram-positive Eubacterium Bacillus subtilis," J. Biol. Chem., vol. 274, pp. 1698-1707, 1999	
	Thompson et al., "CLUSTAL W: improving the sensitivity of progressive multiple sequence alignment through sequence weighting, position-specific gap penalties and weight matrix choice," Nuc. Acids Res, vol. 22, pp. 4673-4680, 1994	
	Towbin et al., "Electrophoretic transfer of proteins from polyacrylamide gels to nitrocellulose sheets: Procedure and some applications," Proc. Natl. Acad. Sci. USA, vol. 76, pp. 4350-4354, 1979	
	Vagner et al., "A vector for systematic gene inactivation in Bacillus subtilis," Microbiology, vol. 144, pp. 3097-3104, 1998.	
	Van Dijl et al., "Non-functional expression of Escherichia coli signal peptidase I in Bacillus subtilis," J. Gen. Microbiology, vol. 137, pp. 2073-2083, 1991	
	Van Dijl et al., "Signal peptidase I overproduction results in increased efficiencies of export and maturation of hybrid secretory proteins in Escherichia coli," Mol. Gen. Genet, vol. 227, pp. 40-48, 1991	
	Van Dijl et al., "Identification of the Potential Active Site of the Signal Peptidase SipS of Bacillus subtilis," J. Biol. Chem., vol. 270, pp. 3611-3618, 1995	
	Vorobjeva et al., "Transformation of Bacillus Megaterium Protoplasts by Plasmid DNA," FEMS Microbiology Letters 7, pp. 261-263, 1980.	
	Weiner et al., "A Novel and Ubiquitous system for Membrane Targeting and Secretion of Cofactor-Containing Proteins," Cell, vol. 93, pp. 93-101, 1998.	
	Weinrauch et al., "Plasmid Marker Rescue Transformation Proceeds by Breakage-Reunion in Bacillus subtilis," Journal of Bacteriology, vol. 169, no. 3, pp. 1205-1211, March, 1987.	
	Weinrauch et al., "Plasmid Marker Rescue Transformation in Bacillus subtilis," Journal of Bacteriology, vol. 154, no. 3, pp. 1077-1087, June, 1983.	
	Wu et al., "Bacterial Twin-Arginine Signal Peptide-Dependent Protein Translocation Pathway: Evolution and Mechanism," J. Mol. Microbiol. Biotechnol. Vol. 2, pp. 179-189, 2000	
	Yu et al., "The Cytochrome bc Complex (menaquinone: Cytochrome c Reductase) in Bacillus subtilis Has a Nontraditional Subunit Organization," J. Bacteriol. Vol. 177, pp. 6751-6760, 1995	
Examiner		
Examiner: Initial i	f reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not	

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

PTO-1449